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=> d his

     (FILE 'HOME' ENTERED AT 07:25:41 ON 03 MAR 2007)

     FILE 'REGISTRY' ENTERED AT 07:26:00 ON 03 MAR 2007
                E PER(3,6-ANHYDRO)CYCLODEXTRIN/CN
L1              1 S E2
                E HEXAKIS(3,6-ANHYDRO)CYCLODEXTRIN/CN
L2              1 S E4
                E (3,6-ANHYDRO)CYCLODEXTRIN/CN

     FILE 'CAPLUS, MEDLINE' ENTERED AT 07:37:42 ON 03 MAR 2007
L3              4 S L1
L4              1 S L3 AND DRUG?
L5              3 S L3 NOT L4
L6              0 S "HEXAKIS(3,6-ANHYDRO)-Γ-CYCLODEXTRIN"
L7              2 S "OCTAKIS(3,6-ANHYDRO)-Γ-CYCLODEXTRIN"
L8              2 S "HEXAKIS(3,6-ANHYDRO)-A-CYCLODEXTRIN"
L9              0 S "OCTAKIS(3,6-ANHYDRO)-A-CYCLODEXTRIN"
L10             0 S "OCTAKIS(3,6-ANHYDRO)-B-CYCLODEXTRIN"
L11             0 S "HEXAKIS(3,6-ANHYDRO)-B-CYCLODEXTRIN"
L12             0 S "HEPTAKIS(3,6-ANHYDRO)-A-CYCLODEXTRIN"
L13             2 S "HEPTAKIS(3,6-ANHYDRO)-B-CYCLODEXTRIN"
L14             0 S "HEPTAKIS(3,6-ANHYDRO)-Γ-CYCLODEXTRIN"
L15         40889 S ?CYCLODEXTRIN?
L16             1 S L15 AND "3,6-ANDHYDRO"
L17             1 S L15 AND ?ANDHYDRO?
L18            64 S L15 AND "3,6-ANHYDRO"
L19             3 S L18 AND PHARMACEUT?
L20            61 S L18 NOT L19
L21             0 S L20 AND TOPICAL?
L22             0 S L20 AND EYE?
L23             2 S L20 AND TISSUE?
L24            59 S L20 NOT L23
L25             0 S L24 AND PERMEAB?
L26             3 S L24 AND DRUG?
L27            56 S L24 NOT L26
L28             0 S L27 AND CARRIER?
L29             0 S L27 AND PERSERVA?
L30             4 S L27 AND SOLUB?
L31            52 S L27 NOT L30
L32             2 S L31 AND DISEASE?
L33             2 S L31 AND STABIL?
L34             7 S L31 AND AGENT?
L35            45 S L31 NOT L34
L36             1 S L35 AND CELLS
L37             0 S L35 AND ACTIVE?
L38             0 S L35 AND DISSOL?
L39             0 S L35 AND BUFFER?
L40             0 S L35 AND OCCULAR
L41             0 S L35 AND TABLET?
L42             1 S L35 AND GEL
L43             2 S L35 AND HYDROPHOB?
L44             1 S L35 AND DELIVER?
L45             1 S L35 AND FACILI?
L46             2 S L35 AND MEMBRANE?
L47            43 S L35 NOT L46
L48            41 S L47 NOT L43
L49          4126 S L15 AND DRUG DELIVE?
L50          1610 S ?CYCLODEXTRIN? (P) DRUG DELIVER?
L51           392 S L50 AND STABIL?
L52            62 S L51 AND CARRIER?
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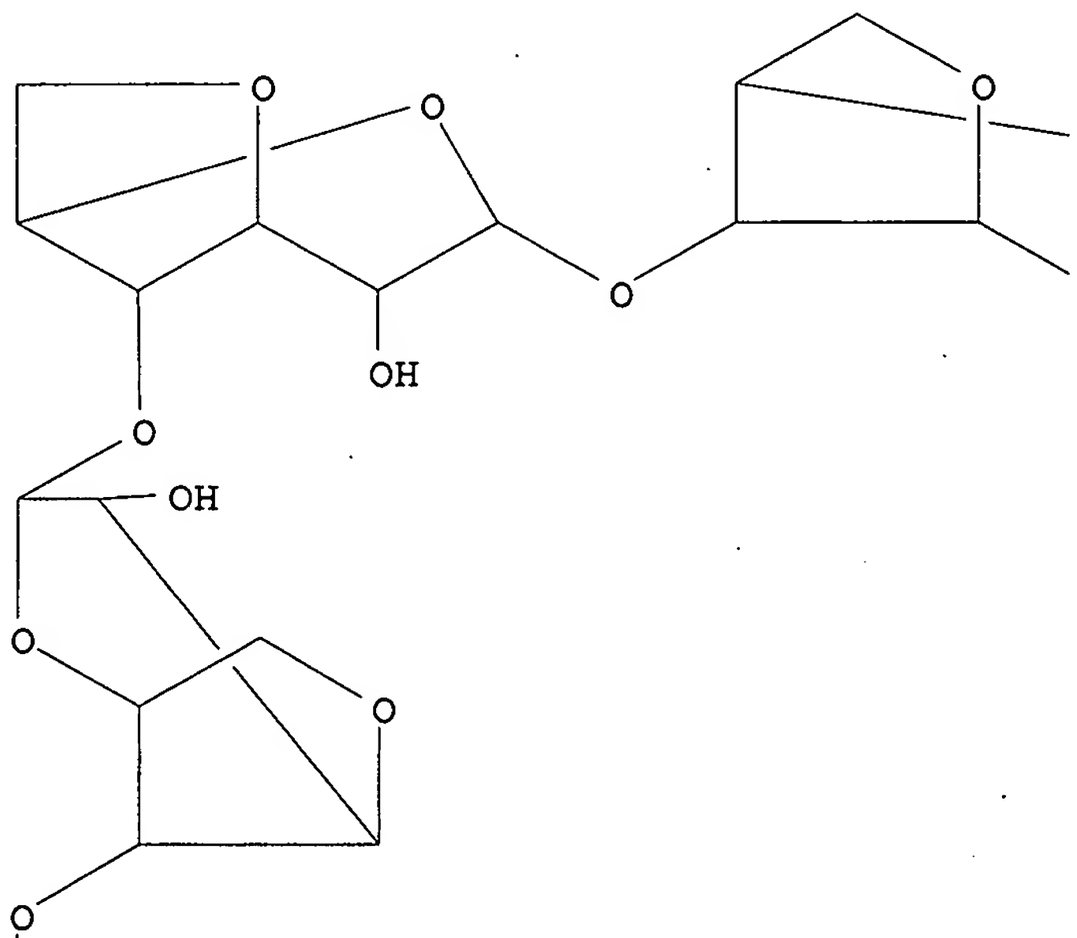
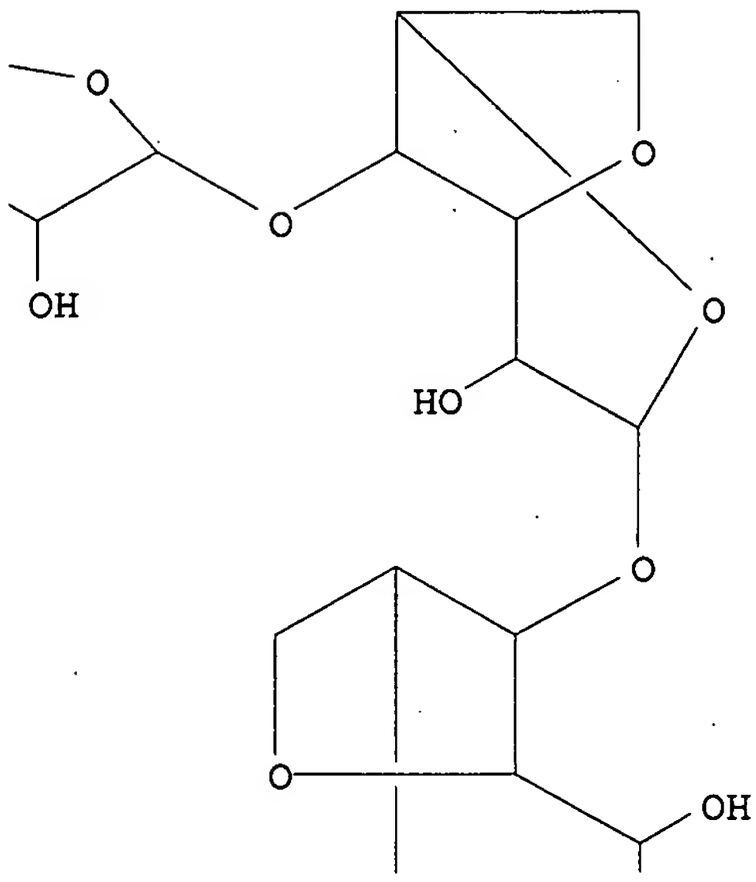
L53	5	S	L52 AND PRESERV?
L54	1	S	L52 AND TISSUE?
L55	46	S	L52 AND COMPLEX?
L56	5	S	L55 AND MEMBRANE?

L1 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2007 ACS on STN
RN 148807-38-9 REGISTRY
ED Entered STN: 21 Jul 1993
CN γ-Cyclodextrin, 3A,6A:3B,6B:3C,6C:3D,6D:3E,6E:3F,6F:3G,6G:3H,6H-octaanhydro- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 1,5:7,11:13,17:19,23:25,29:31,35:37,41:43,47-Octamethanooctafuro[3,4-d:3',4'-i:3'',4''-n:3''',4'''-s:3'''',4''''-x:3''''',4'''''-c1:3''''''',4'''''''-h1:3''''''',4'''''''-m1][1,3,6,8,11,13,16,18,21,23,26,28,31,33,36,38]hexadecaoxacyclotetracontin, γ-cyclodextrin deriv.
OTHER NAMES:
CN Per(3,6-anhydro)-γ-cyclodextrin
FS STEREOSEARCH
MF C48 H64 O32
SR CA
LC STN Files: CA, CAPLUS, CASREACT



PAGE 1-B



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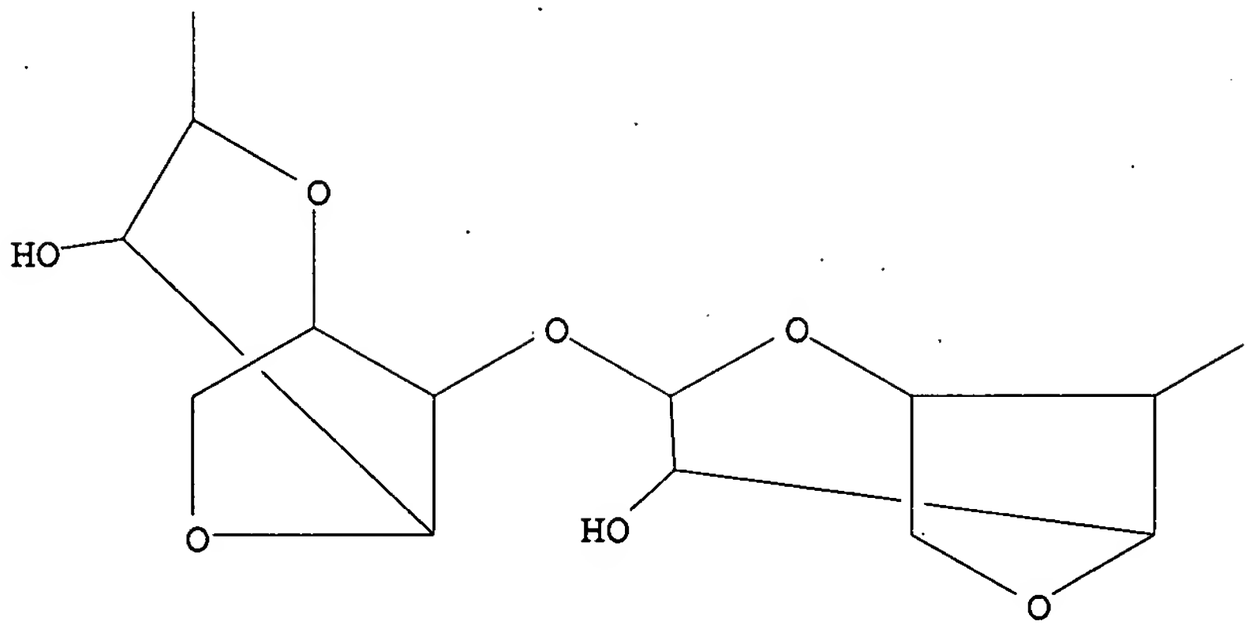
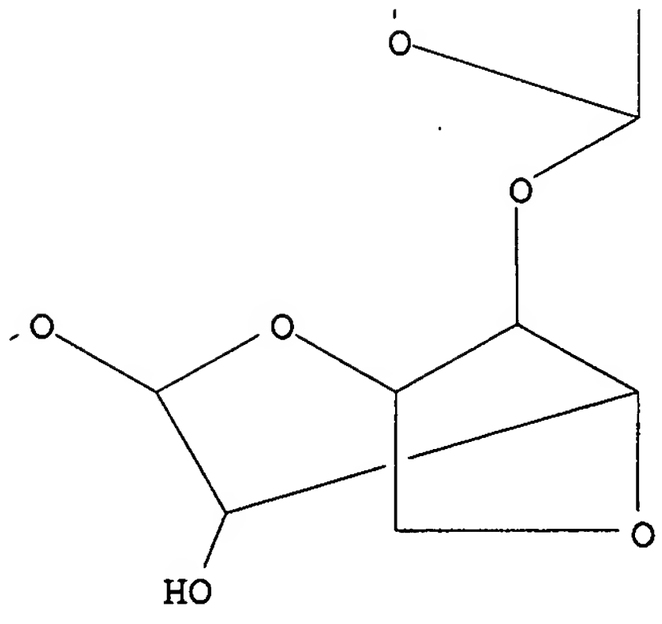


PAGE 2-B



4 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L4 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:55101 CAPLUS
DOCUMENT NUMBER: 142:162607
TITLE: Pharmaceutical compositions comprising peranhydrocyclodextrin
INVENTOR(S): Szente, Lajos; Szejtli, Jozsef; Jicsinszky, Laszlo; Kis, Georg Ludwig; Schoch, Christian
PATENT ASSIGNEE(S): Novartis AG, Switz.; Novartis Pharma GmbH
SOURCE: PCT Int. Appl., 21 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005004922	A1	20050120	WO 2004-EP7253	20040702
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2004255429	A1	20050120	AU 2004-255429	20040702
CA 2529290	A1	20050120	CA 2004-2529290	20040702
EP 1646405	A1	20060419	EP 2004-740601	20040702
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
CN 1812813	A	20060802	CN 2004-80017868	20040702
BR 2004012116	A	20060815	BR 2004-12116	20040702
US 2007042994	A1	20070222	US 2006-559524	20060714

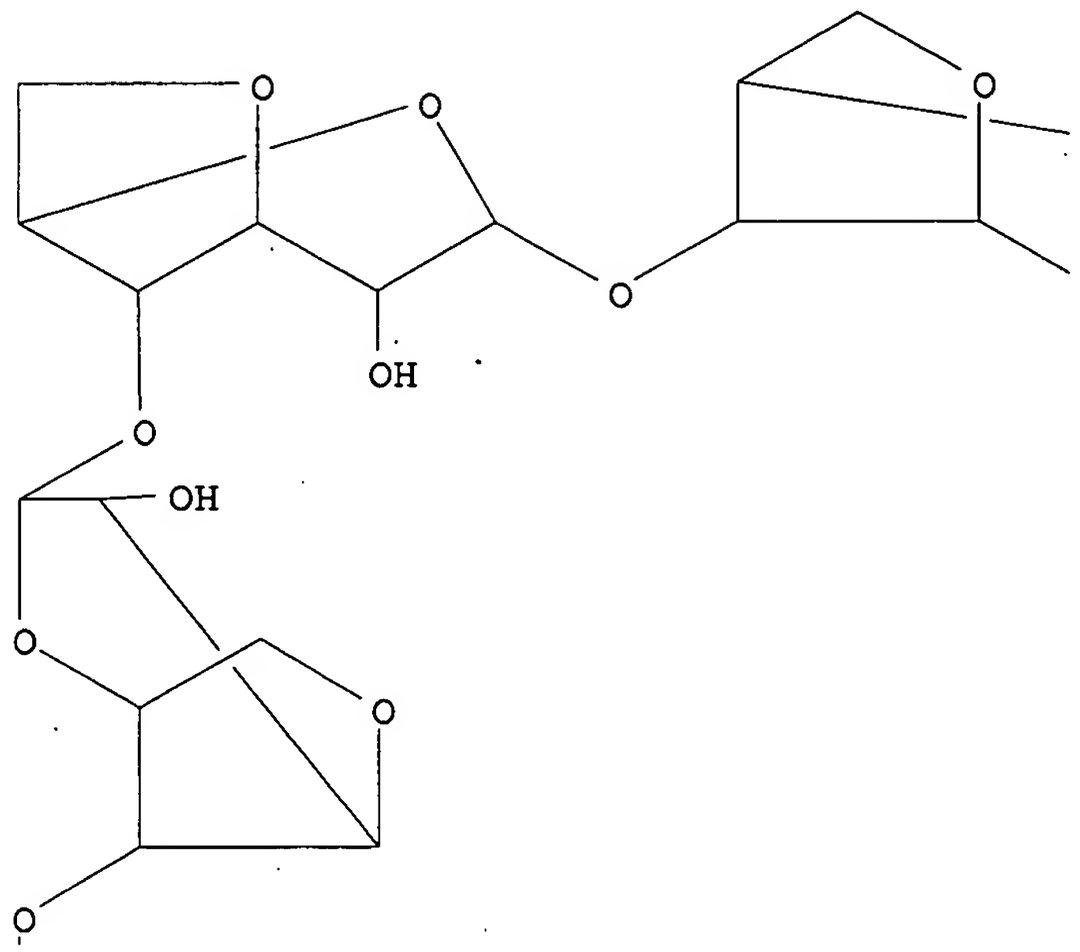
PRIORITY APPLN. INFO.: GB 2003-15745 A 20030704
WO 2004-EP7253 W 20040702

AB The present invention relates to a pharmaceutical composition comprising a peranhydrocyclodextrin, a drug, and a carrier, to the use of a peranhydrocyclodextrin as a drug transport enhancer (e.g. permeation enhancer), and to the use of a peranhydrocyclodextrin in the preparation of a pharmaceutical composition as a synergistic adjunctive system. Hexakis(3,6-anhydro)-α-cyclodextrin was prepared, and its effect on corneal permeation of diclofenac was examined

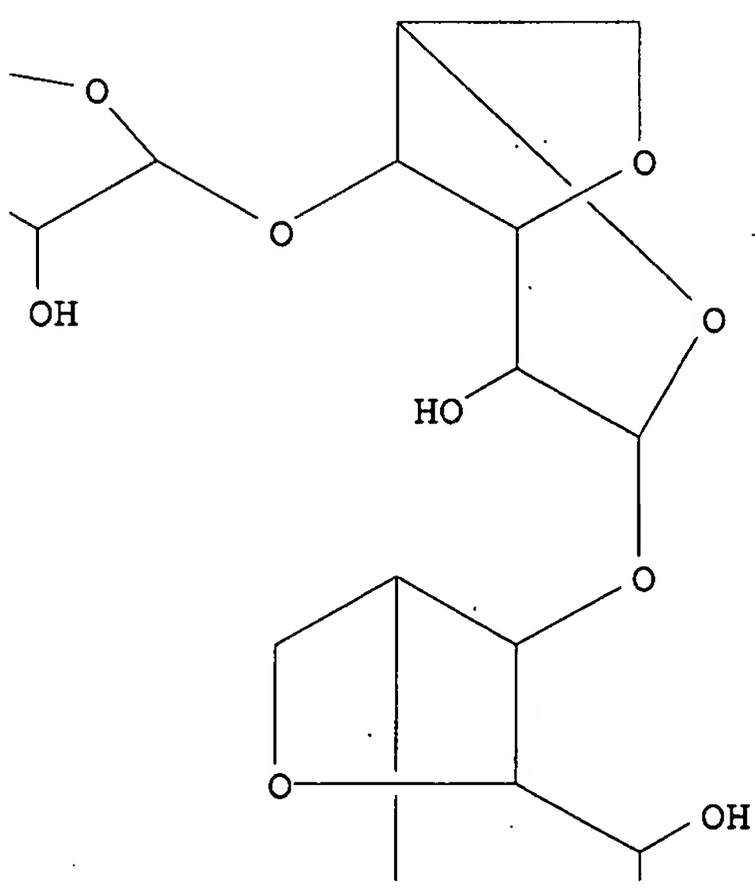
IT 148807-38-9P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(pharmaceutical compns. comprising peranhydrocyclodextrins for enhancement of permeability of topical drugs)

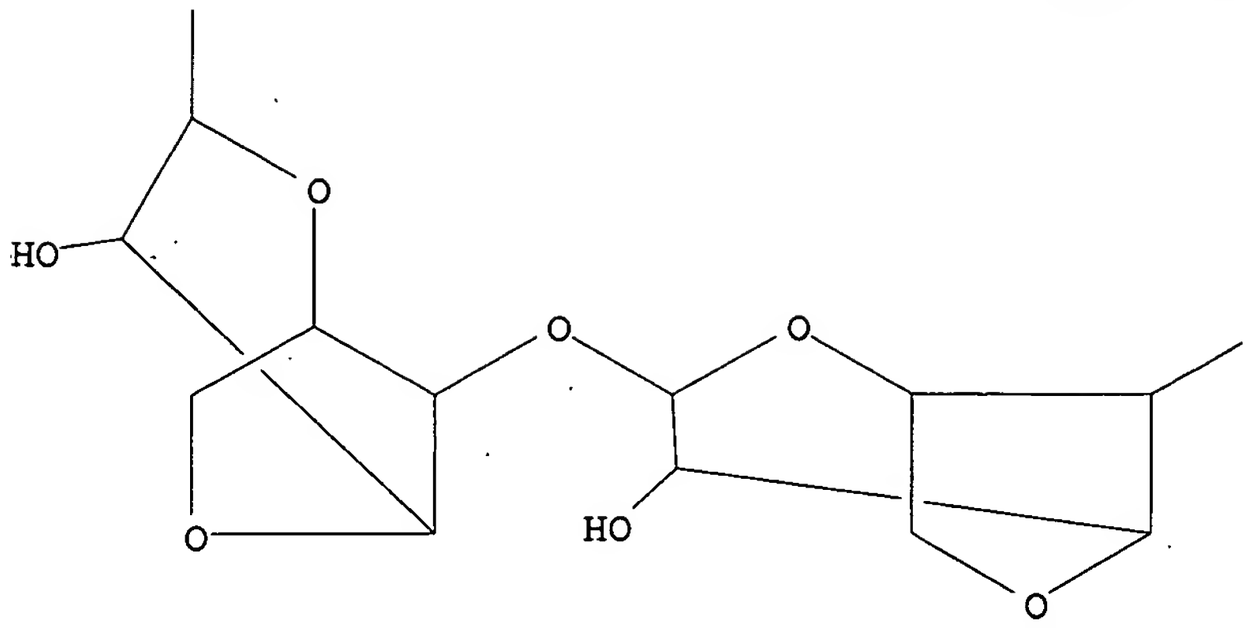
RN 148807-38-9 CAPLUS
CN γ-Cyclodextrin, 3A,6A:3B,6B:3C,6C:3D,6D:3E,6E:3F,6F:3G,6G:3H,6H-octaanhydro- (9CI) (CA INDEX NAME)

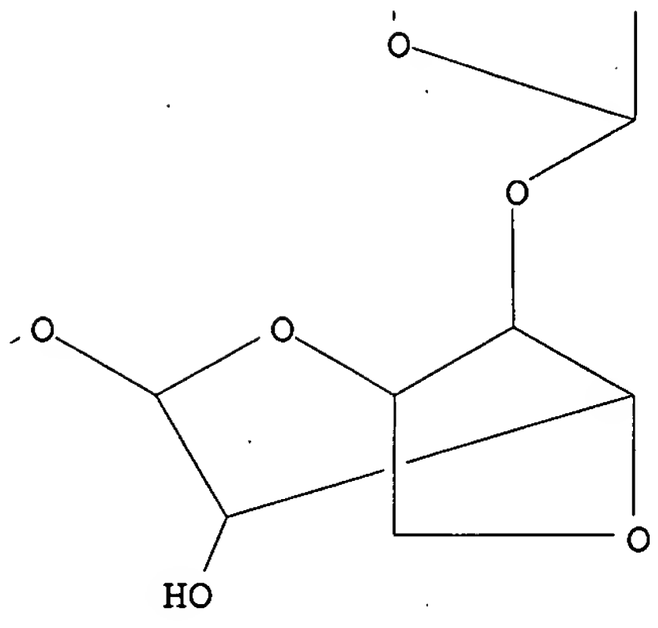
PAGE 1-A



PAGE 1-B







REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:10691 CAPLUS
DOCUMENT NUMBER: 142:280362
TITLE: Ionic complexation properties of per(3,6-anhydro)cyclodextrin derivatives towards lanthanides
AUTHOR(S): Baudin, Cecile; Tardy, Fabienne; Dalbiez, Jean-Pierre; Jankowski, Christophe; Fajolles, Christophe; Leclair, Gaetan; Amekraz, Badia; Perly, Bruno; Mauclaire, Laurent
CORPORATE SOURCE: CEA, DRECAM/SCM, CEA Saclay, Gif-sur-Yvette, F-91191, Fr.
SOURCE: Carbohydrate Research (2005), 340(1), 131-138
CODEN: CRBRAT; ISSN: 0008-6215
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 142:280362
AB Using per(3,6-anhydro)cyclodextrin derivs. [per(3,6-anhydro)CD], it was possible to produce new lanthanide, such as praseodymium, chelates by careful choice of the size and functional groups. Heptakis(3,6-anhydro-2-O-methyl)cyclomaltoheptaose fulfills the best criteria for complexation of praseodymium ions. NMR was used to derive the association consts. and the stoichiometries of these new complexes. Finally, a three-dimensional structure of these complexes consistent with the NMR data is proposed, to ascertain the position of praseodymium in the cavity of the per(3,6-anhydro)CD. For the present purposes, heptakis(2-O-acetyl-3,6-anhydro)cyclomaltoheptaose, octakis(2-O-acetyl-3,6-anhydro)cyclomaltooctaose, heptakis(3,6-anhydro-2-O-methyl)cyclomaltoheptaose and octakis(3,6-anhydro-2-O-methyl)cyclomaltooctaose have been synthesized and purified.
REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1996:311934 CAPLUS
DOCUMENT NUMBER: 125:58897
TITLE: X-ray crystallographic study of octakis(3,6-anhydro)-γ-cyclodextrin with a highly specific cation binding ability
AUTHOR(S): Yamamura, Hatsuo; Masuda, Hideki; Kawase, Yoshitaka; Kawai, Masao; Butsugan, Yasuo; Einaga, Hisahiko
CORPORATE SOURCE: Dep. Applied Chemistry, Nagoya Inst. Technol., Nagoya, 466, Japan
SOURCE: Chemical Communications (Cambridge) (1996), (9), 1069-1070
CODEN: CHCOFS; ISSN: 1359-7345
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Octakis(3,6-anhydro)-γ-cyclodextrin, which is composed of eight 3,6-anhydroglucoses, is analyzed by x-ray crystallog. to determine its unique structure which contains a hydrophilic cavity enabling specific binding to Cs+.

L5 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1993:539621 CAPLUS
DOCUMENT NUMBER: 119:139621
TITLE: Preparation of octakis(3,6-anhydro)-γ-cyclodextrin and characterization of its cation binding ability
AUTHOR(S): Yamamura, Hatsuo; Ezuka, Toshishige; Kawase, Yoshitaka; Kawai, Masao; Butsugan, Yasuo; Fujita, Kahee

CORPORATE SOURCE: Dep. Appl. Chem., Nagoya Inst. Technol., Nagoya, 466, Japan
SOURCE: Journal of the Chemical Society, Chemical Communications (1993), (7), 636-7
CODEN: JCCCAT; ISSN: 0022-4936
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Octakis(3,6-anhydro)-γ-cyclodextrin (I) has been prepared by the reaction of octakis(6-O-tosyl)-γ-cyclodextrin with KOH. Compound I shows a specific binding ability to alkali metal ions with larger ionic diams., owing to its hydrophilic cavity which is similar to the layered crown ethers.

L8 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:55101 CAPLUS
DOCUMENT NUMBER: 142:162607
TITLE: Pharmaceutical compositions comprising peranhydrocyclodextrin
INVENTOR(S): Szente, Lajos; Szejtli, Jozsef; Jicsinszky, Laszlo; Kis, Georg Ludwig; Schoch, Christian
PATENT ASSIGNEE(S): Novartis AG, Switz.; Novartis Pharma GmbH
SOURCE: PCT Int. Appl., 21 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005004922	A1	20050120	WO 2004-EP7253	20040702
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RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2004255429	A1	20050120	AU 2004-255429	20040702
CA 2529290	A1	20050120	CA 2004-2529290	20040702
EP 1646405	A1	20060419	EP 2004-740601	20040702
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
CN 1812813	A	20060802	CN 2004-80017868	20040702
BR 2004012116	A	20060815	BR 2004-12116	20040702
US 2007042994	A1	20070222	US 2006-559524	20060714

PRIORITY APPLN. INFO.: GB 2003-15745 A 20030704
WO 2004-EP7253 W 20040702

AB The present invention relates to a pharmaceutical composition comprising a peranhydrocyclodextrin, a drug, and a carrier, to the use of a peranhydrocyclodextrin as a drug transport enhancer (e.g. permeation enhancer), and to the use of a peranhydrocyclodextrin in the preparation of a pharmaceutical composition as a synergistic adjunctive system. Hexakis (3,6-anhydro)-.alpha.-cyclodextrin was prepared, and its effect on corneal permeation of diclofenac was examined

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:311144 CAPLUS
DOCUMENT NUMBER: 132:339914
TITLE: Cation complexation properties of hexakis(2-O-methyl-3,6-anhydro)-α-cyclodextrin: A 1H NMR study
AUTHOR(S): Fauvelle, F.; Gadelle, A.; Debouzy, J. C.; Baudin, C.; Perly, B.
CORPORATE SOURCE: CRSSA, laboratoire de Biophysique, La Tronche, 38702, Fr.
SOURCE: Supramolecular Chemistry (2000), 11(3), 233-237
CODEN: SCHEER; ISSN: 1061-0278
PUBLISHER: Gordon & Breach Science Publishers
DOCUMENT TYPE: Journal

LANGUAGE: English

AB The affinity of hexakis(2-O-methyl-3,6-anhydro)-α-cyclodextrin (3,6-α-CDM) for Ba2+, Pb2+, Ca2+ and Sr2+ has been tested by 1H NMR. 3,6-α-CDM forms strong complexes in water with Pb2+ and Ba2+. The comparison with the parent hexakis(3,6-anhydro)-.alpha.-cyclodextrin bearing hydroxyl groups instead of methoxy groups reveals that the O-CH3 substitution significantly improves the anhydro-cyclodextrin selectivity.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1996:554353 CAPLUS
DOCUMENT NUMBER: 125:329164
TITLE: A cyclodextrin derivative with cation carrying ability: heptakis(3,6-anhydro)-.beta.-cyclodextrin 2-O-p-phenylazobenzoate
AUTHOR(S): Yamamura, Hatsuo; Kawai, Hirotake; Yotsuya, Tadahiro; Higuchi, Tamotsu; Butsugan, Yasuo; Araki, Shuki; Kawai, Masao; Fujita, Kahee
CORPORATE SOURCE: Dep. of Applied Chem., Nagoya Inst. of Technology, Nagoya, 466, Japan
SOURCE: Chemistry Letters (1996), (9), 799-800
CODEN: CMLTAG; ISSN: 0366-7022
PUBLISHER: Nippon Kagakkai
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A cation-complexing host, heptakis(3,6-anhydro)-B-cyclodextrin, was converted to a mono-p-phenylazobenzoyl derivative, which exhibited alkali metal-carrying ability in CH2Cl2-H2O system.

L13 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1992:106630 CAPLUS
DOCUMENT NUMBER: 116:106630
TITLE: Preparation of heptakis[6-O-(p-tosyl)]-β-cyclodextrin and heptakis[6-O-(p-tosyl)]-2-O-(p-tosyl)-β-cyclodextrin and their conversion to heptakis(3,6-anhydro)-.beta.-cyclodextrin
AUTHOR(S): Yamamura, Hatsuo; Fujita, Kahee
CORPORATE SOURCE: Fac. Pharm. Sci., Fukuyama Univ., Fukuyama, 729-02, Japan
SOURCE: Chemical & Pharmaceutical Bulletin (1991), 39(10), 2505-8
CODEN: CPBTAL; ISSN: 0009-2363
DOCUMENT TYPE: Journal
LANGUAGE: English
GI For diagram(s), see printed CA Issue.
AB Heptakis[6-O-(p-tosyl)]-β-cyclodextrin (I) and heptakis[6-O-(p-tosyl)]-2-O-(p-tosyl)-β-cyclodextrin (II) were prepared by the reaction of β-cyclodextrin with p-tosyl chloride in pyridine. I and II were converted to heptakis(3,6-anhydro)-.beta.-cyclodextrin (III) consisting of (1C4) glucose units.

L16 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:630178 CAPLUS
TITLE: Conformation and dynamics of 3,6-anhydrosugars
AUTHOR(S): Hunsen, Mo
CORPORATE SOURCE: Department of Chemistry, Kenyon College, Gambier, OH, 43022, USA
SOURCE: Abstracts of Papers, 226th ACS National Meeting, New York, NY, United States, September 7-11, 2003 (2003), CARB-050. American Chemical Society: Washington, D. C.
CODEN: 69EKY9
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English

AB Anhydrosugars of the 3,6-andhydro form are components of thermo-reversible gel forming polysaccharides such as agarose and carrageenans and some cyclodextrins. Due to their bicyclic nature, anhydrosugars are generally taken to be very rigid. In this work, we report our studies on the conformations and dynamics of the 3,6-anhydrosugars of glucose, galactose, mannose, and talose in comparison with their monocyclic forms by mol. mechanics, semiempirical, and ab initio calcns. and mol. dynamics simulations. This is important in understanding the gel forming abilities of the above polysaccharides and the hosting abilities of the anhydrocyclodextrins.

L19 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:55101 CAPLUS
DOCUMENT NUMBER: 142:162607
TITLE: Pharmaceutical compositions comprising peranhydrocyclodextrin
INVENTOR(S): Szente, Lajos; Szejtli, Jozsef; Jicsinszky, Laszlo; Kis, Georg Ludwig; Schoch, Christian
PATENT ASSIGNEE(S): Novartis AG, Switz.; Novartis Pharma GmbH
SOURCE: PCT Int. Appl., 21 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005004922	A1	20050120	WO 2004-EP7253	20040702
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
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AU 2004255429	A1	20050120	AU 2004-255429	20040702
CA 2529290	A1	20050120	CA 2004-2529290	20040702
EP 1646405	A1	20060419	EP 2004-740601	20040702
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
CN 1812813	A	20060802	CN 2004-80017868	20040702
BR 2004012116	A	20060815	BR 2004-12116	20040702
US 2007042994	A1	20070222	US 2006-559524	20060714

PRIORITY APPLN. INFO.: GB 2003-15745 A 20030704
WO 2004-EP7253 W 20040702

AB The present invention relates to a pharmaceutical composition comprising a peranhydrocyclodextrin, a drug, and a carrier, to the use of a peranhydrocyclodextrin as a drug transport enhancer (e.g. permeation enhancer), and to the use of a peranhydrocyclodextrin in the preparation of a pharmaceutical composition as a synergistic adjunctive system. Hexakis(3,6-anhydro)-α- cyclodextrin was prepared, and its effect on corneal permeation of diclofenac was examined

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

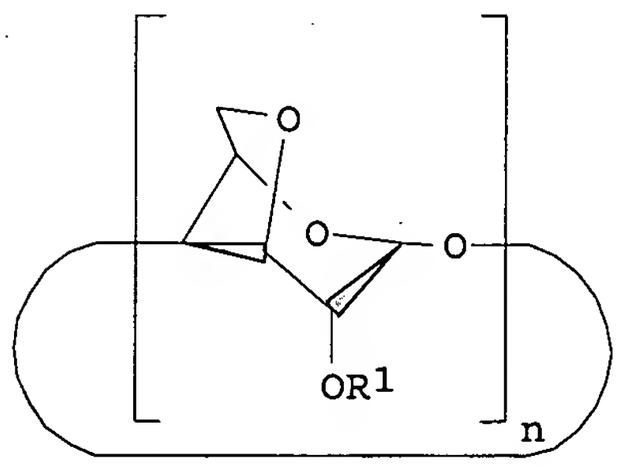
L19 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:990981 CAPLUS
DOCUMENT NUMBER: 140:52345
TITLE: Per(3,6-anhydro) cyclodextrin derivatives, their preparation, and their use for the separation or fixation of anions based on manganese and chromium
INVENTOR(S): Gadelle, Andree
PATENT ASSIGNEE(S): Commissariat A L'energie Atomique, Fr.; Centre National De La Recherche Scientifique Cnrs
SOURCE: Fr. Demande, 42 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent

LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

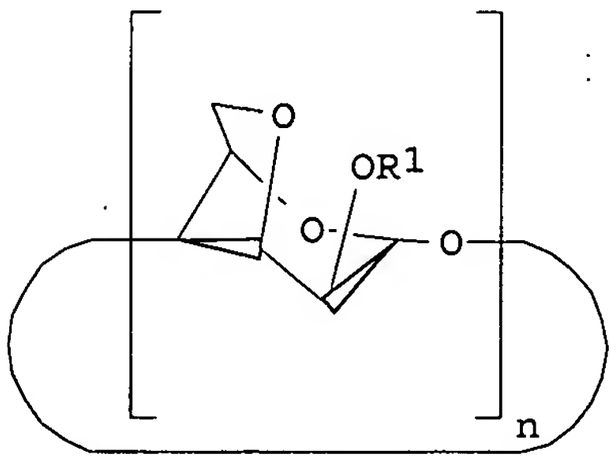
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2840906	A1	20031219	FR 2002-7205	20020612
FR 2840906	B1	20040716		
WO 2003106507	A1	20031224	WO 2003-FR1741	20030611
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003250357	A1	20031231	AU 2003-250357	20030611
EP 1511774	A1	20050309	EP 2003-760007	20030611
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2005534729	T	20051117	JP 2004-513337	20030611
US 2006014722	A1	20060119	US 2005-517582	20050801

PRIORITY APPLN. INFO.: FR 2002-7205 A 20020612
WO 2003-FR1741 W 20030611

OTHER SOURCE(S): MARPAT 140:52345
GI



I



II

AB Derivs. of per(3,6-anhydro) cyclodextrins having the general formulas (I) and (II) are prepared which can be used for the separation or fixation of chromate, dichromate and/or manganate anions from water or as a pharmaceutical complexing

agent for humans. R1 in the general formulas I and II represents -OCONHR2, OH, OR3, SH, SR3, OCOR3, NH2, NHR3, NR3R4, CONH2, CONR3R4, CN, COOR3, OCH2COOH, or COOH, R3 and R2 represent an aliphatic, saturated or unsatd. group, R3 and R4 represent an aliphatic or aromatic hydrocarbon group which can be saturated or unsatd. and which can be substituted by halogen atoms or hetero atoms, such as O, S, and N, and n is 6, 7, or 8, or R1 represents the group OCONH(CR5R6)mNHCOOR7 with R5 and R6 being aliphatic saturated or unsatd. groups, and R7 represents glucosidic or maltosidic units of peranhydrocyclodextrin and m is a number from 1 to 20. Preferably, R1 of the per(3,6-anhydro) cyclodextrin derivative is -OCONHR2 with R2 being an Et or hexyl group and n being 6. The per(3,6-anhydro) cyclodextrin derivs. are prepared by reacting per(3, 6-anhydro) cyclodextrins having the general formulas (III) and (IV) with an isocyanate OCN-R2 or a diisocyanate OCN(CR5R6)mNCO. Polymers are obtained by reacting at least two per(3,6-anhydro) cyclodextrin derivs. having the general formulas III and IV with n and m being 6 and R5 and R6 being H. For the removal of anions from water the per(3, 6-anhydro) cyclodextrin derivative or polymer is dissolved in an organic solvent immiscible with water.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L19 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1995:909459 CAPLUS
DOCUMENT NUMBER: 123:290262
TITLE: Manufacture method and use of mono-3, 6-anhydro-cyclodextrins for solubilizing hydrophobic compound and monitoring the purity of enantiomer
INVENTOR(S): Djedaini-Pilard, Florence; Perly, Bruno
PATENT ASSIGNEE(S): Commissariat a l'Energie Atomique, Fr.
SOURCE: PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9517433	A1	19950629	WO 1994-FR1502	19941221
W: AU, HU, JP, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
FR 2714066	A1	19950623	FR 1993-15470	19931222
FR 2714066	B1	19960112		
AU 9513199	A	19950710	AU 1995-13199	19941221
AU 687966	B2	19980305		
EP 736045	A1	19961009	EP 1995-904578	19941221
EP 736045	B1	19990317		
R: CH, DE, GB, IT, LI, NL, SE				
HU 74940	A2	19970328	HU 1996-1735	19941221
HU 219880	B	20010828		
JP 09506921	T	19970708	JP 1995-517234	19941221
JP 3604390	B2	20041222		
US 5760016	A	19980602	US 1996-652467	19961209

PRIORITY APPLN. INFO.: FR 1993-15470 A 19931222
WO 1994-FR1502 W 19941221

OTHER SOURCE(S): MARPAT 123:290262

AB The title compds. having good solubility in water and ring size corresponding to α-, β- and γ- cyclodextrin are useful for formation of inclusion complexes with hydrophobic compds. for cosmetic

formulation, pharmaceuticals, etc. and are prepared by the reaction of a C6-monotosylated cyclodextrin with an aqueous LiOH solution followed by regular working up steps.

L23 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:68010 CAPLUS
DOCUMENT NUMBER: 138:211797
TITLE: First evaluation of per(3,6-anhydro,2-O-carboxymethyl)-α-cyclodextrin for biological decontamination of cobalt
AUTHOR(S): Debouzy, J. C.; Tymen, H.; Le Gall, B.; Fauvelle, F.; Martel, B.; Gadelle, T.; Gadelle, A.
CORPORATE SOURCE: Unite de Biophysique et Service de Biospectrometrie, CRSSA, La Tronche, 38702, Fr.
SOURCE: S.T.P. Pharma Sciences (2002), 12(6), 397-402
CODEN: STSSE5; ISSN: 1157-1489
PUBLISHER: Editions de Sante
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Per (3,6-anhydro-2-O-carboxymethyl)-α-cyclodextrin (ACX) is a polydentate analog of EDTA, a known cation chelating reagent. ACX exhibits strong affinities in vitro for lanthanids, uranyle and especially for Co. The possible application of ACX for Co decontamination was tested in an aqueous solution and incorporated in agarose gel on human skin (in Franz's diffusion chambers) and living rats. In comparison with EDTA and DTPA, skin decontamination by ACX was better when it was incorporated in a gel and similar after several skin washing cycles. Several ACX-loaded tissues (viscose and polyester) were also assayed on the same model and showed an increased fixation of Co by ACX-loaded viscose, whereas this was not observed with polyester.
REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L23 ANSWER 2 OF 2 MEDLINE on STN
ACCESSION NUMBER: 2003077509 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12589256
TITLE: [In vitro uranyle affinity of per (3,6-anhydro-2-O-carboxymethyle)-alpha-cyclodextrin and conditions required for in vivo application].
Affinite in vitro de la per (3,6-anhydro-2-O-carboxymethyle)-alpha-cyclodextrine pour les uranyles et conditions requises en vue d'une application in vivo.
AUTHOR: Debouzy J C; Gadelle A; Tymen H; Le Gall B; Millot X; Moretto P; Fauvelle F; Le Peoc'H M; Dabouis V; Martel B
CORPORATE SOURCE: CRSSA/BCM, La Tronche.
SOURCE: Annales pharmaceutiques francaises, (2003 Jan) Vol. 61, No. 1, pp. 62-9.
Journal code: 2985176R. ISSN: 0003-4509.
PUB. COUNTRY: France
DOCUMENT TYPE: (ENGLISH ABSTRACT)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: French
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200304
ENTRY DATE: Entered STN: 21 Feb 2003
Last Updated on STN: 17 Apr 2003
Entered Medline: 16 Apr 2003
AB Per (3.6-anhydro-2-O-carboxymethyle)- alpha-cyclodextrin ([1]) is a polydentate analog of EDTA, a well-known cation chelating reagent. [1] exhibits strong affinities in vitro for lanthanids, cobalt and also for uranyl cations. Hence, a 1:1 stoechiometry and a high affinity for uranyle (6<logK<7) is found in

vitro. Moreover, [1] is not hemolytic and exhibits not lettral properties in mice (LD(50)=42mM). In vivo injection at supralethal amounts of uranyl complex of [1] prevents immediate death in mice while unable to protect against later death. Pharmacocinetic studies show that a dissociation of the complex occurs lead to the release of free uranyle. Other complexation assays using [1] grafted tissues show that chelating properties for lead and uranyle differ from thoses observed in vitro.

L26 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:548189 CAPLUS
DOCUMENT NUMBER: 144:94042
TITLE: Hexakis (3,6-anhydro) tetrakis (2A,B,D,E-O-butyl) cyclomalto hexaose as a promising biological cation cryptant: Complexation and NMR study of interaction with membranes
AUTHOR(S): Pailler, J.-Y.; Gadelle, A.; Debouzy, J.-C.
CORPORATE SOURCE: CRSSA, Unite de Biophysique, La Tronche, 38702, Fr.
SOURCE: Journal of Drug Delivery Science and Technology (2005), 15(3), 237-244
CODEN: JDDSAL
PUBLISHER: Editions de Sante
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Per·anhydro α- cyclodextrin exhibits in vivo and in vitro cation complexation properties, especially for heavy metal cations. In order to enhance the selectivity for toxic cations, several alkyl derivs. were prepared by substitution at the C-2 position. Among the series of 3 ,6-anhydro-α- cyclodextrin derivs. (from hexakis (3,6-anhydro) hexakis (2A,B,C,D,E,F-O-methyl) cyclomaltohexaose (M36) to hexakis (3, 6-anhydro) tetrakis (2A,B,D,E-O-octyl) cyclomaltohexaose (O36) alkyl derivs.), hexakis (3,6-anhydro) tetrakis (2A,B,D,E-O-butyl) cyclomaltohexaose (B36) was found to be of special interest. The properties of B36 in aqueous solution and in the presence of synthetic membranes were studied by mass spectroscopy, 31P, 2H and 1H-NMR spectroscopy, by surface plasmon resonance using BIAcore, and via superficial pressure measurements. It was found that B36 exhibits a special affinity for lead compared to other heavy toxic cations (mercury, cadmium, uranyl), but a negligible affinity for physiol. cations (sodium, calcium, potassium), i.e., a great selectivity. The surface-active properties of the soapy B36 solution in water (with DMSO < 5%) were determined by surface tension measurements. In terms of solubility, B36 is very soluble in methanol (30 mM), less in ethanol (2 mM), while poorly soluble in water (500 μM). However, the use of a ternary solvent system (methanol, ethanol, water) allowed the formation of a true gel. This, related with its amphiphilic properties and possibilities for peculiar interactions with membranes are shown by 31P and 2H-NMR spectroscopic studies.
REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:730839 CAPLUS
DOCUMENT NUMBER: 135:290396
TITLE: Per(3,6-anhydro) cyclodextrin derivatives, preparation and use thereof for separating ions
INVENTOR(S): Gadelle, Andree; Fauvelle, Florence; Debouzy, Jean-Claude
PATENT ASSIGNEE(S): Commissariat a l'Energie Atomique, Fr.; Centre National de la Recherche Scientifique (CNRS)
SOURCE: PCT Int. Appl., 32 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

WO 2001072849	A1	20011004	WO 2001-FR923	20010327
W: US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
FR 2807044	A1	20011005	FR 2000-3899	20000328
FR 2807044	B1	20020503		
EP 1187854	A1	20020320	EP 2001-919576	20010327
EP 1187854	B1	20041110		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
AT 282048	T	20041115	AT 2001-919576	20010327
ES 2231469	T3	20050516	ES 2001-1919576	20010327
US 2002137923	A1	20020926	US 2001-926637	20011128
US 6559135	B2	20030506		

PRIORITY APPLN. INFO.: FR 2000-3899 A 20000328
WO 2001-FR923 W 20010327

OTHER SOURCE(S): MARPAT 135:290396

AB The invention concerns per(3,6-anhydro) cyclodextrin derivs., their preparation and their use for separating polluting ions, for example, for human decontamination. The derivs. bear axially or equatorially substituted group R1 on positions 2 where one R1 at least represents the -OCH2COOH group and the other R1's, identical or different, correspond to one of the formulas: OH, OR2, SH, SR2, OCOR2, NH2, NHR2, NR2R3, CONH2, CONHR2, CONR2R3, CN, COOR2, COOH and R2, wherein: R2 and R3, identical or different, represent a saturated or unsatd. hydrocarbon, aliphatic or aromatic group, capable of comprising one several heteroatoms selected among O, S and N; and n is equal to 6, 7 or 8. Thus, heating 1 g hexakis(3,6-anhydro)cyclomaltohexaose for 2 h at 120°, adding 10 mL DMSO and 10 mL a 2N NaH DMSO solution, mixing under Ar for 3 h at room temperature, combining the resulting blue-gray solution with 1.6 g Na monochloroacetate, mixing at room temperature for 24 h and working up gave a hexakis(3,6-anhydro-2-O-carboxymethyl)cyclomaltohexaose which formed easily complexes with aqueous solution containing Lu3+, La3+, Dy3+, Eu3+ and Co2+ ions.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 3 OF 3 MEDLINE on STN
ACCESSION NUMBER: 1998354325 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9689900
TITLE: Interaction of per 3,6-anhydro -alpha cyclodextrins (alpha 36CD) and lead-alpha 36CD complex with biological systems.
AUTHOR: Debouzy J C; Fauvelle F; Gadelle A; Baudin C; Richard M; Perly B; Chouteau F; Joets J; Tazz J J; Daveloose D
CORPORATE SOURCE: CRSSA, Laboratoire RMN, Tronche, France.
SOURCE: Bollettino chimico farmaceutico, (1998 May) Vol. 137, No. 5, pp. 144-51.
Journal code: 0372534. ISSN: 0006-6648.
PUB. COUNTRY: Italy
DOCUMENT TYPE: (IN VITRO)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199809
ENTRY DATE: Entered STN: 6 Oct 1998
Last Updated on STN: 6 Oct 1998
Entered Medline: 18 Sep 1998

AB The interactions of per (3,6 anhydro) alpha cyclodextrin (alpha 36CD) and of lead-alpha 36CD complex with

biological systems were tested by NMR, ESR and electronic microscopy using erythrocytes and model membranes. It was found that the haemolytic activity of alpha 36CD alone was seven fold lower than that of natural alpha cyclodextrin (evaluated by the concentration inducing 50% haemolysis, DH50 = 35 mM). Conversely, the formation of the complex resulted in an increase of haemolytic properties, with DH50 of 1 mM. The mechanism proposed was an increased membrane diffusion by endocytosis of the complex, leading to higher amounts of intracellular lead.

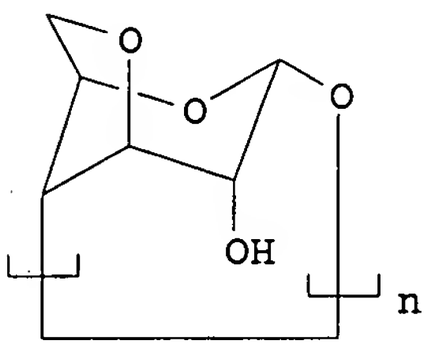
L30 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:40820 CAPLUS
DOCUMENT NUMBER: 145:152364
TITLE: Cation complexing 2-O-alkylated, 3,6 -anhydro-α- cyclodextrins: the side-chain length governs physicochemical properties and practical applications
AUTHOR(S): Pailler, J. Y.; Gadelle, A.; Fauvelle, F.; Dabouis, V.; Crouzier, D.; Debouzy, J. C.
CORPORATE SOURCE: Unite de Biophysique, CRSSA, La Tronche, 38702, Fr.
SOURCE: Journal of Drug Delivery Science and Technology (2005), 15(6), 419-426
CODEN: JDDSAL; ISSN: 1773-2247
PUBLISHER: Editions de Sante
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A series of chain-grafted per-3,6-anhydro -α- cyclodextrins (ACD) were synthesized and their cation complexing properties studied by 1H-NMR spectroscopy. Superficial tension measurements, 1H-NMR spectroscopy and phase diagrams showed that the properties of ACD were closely related to LogP, which also controlled their interactions with membranes. As a result, practical applications could be proposed and further perspectives suggested. Hence direct decontamination in liqs. may be possible for most amphiphilic derivs., since these amphiphilic mols. form gels or soaps. The most hydrophobic derivative realizes an insol. complex that can be used for depollution or cation determination in liqs.
REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:56571 CAPLUS
DOCUMENT NUMBER: 132:345099
TITLE: New asymmetric β- cyclodextrin derivatives designed for chiral recognition
AUTHOR(S): Djedaini-Pilard, F.; Gosnat, M.; Brucato-Mauclaire, V.; Creminon, C.; Dalbiez, J. P.; Pilard, S.; Luijten, W.; Perly, B.
CORPORATE SOURCE: DRECAM/SCM, DRM/SPI, CEA-Saclay, Gif sur Yvette, F-91191, Fr.
SOURCE: Proceedings of the International Symposium on Cyclodextrins, 9th, Santiago de Comostela, Spain, May 31-June 3, 1998 (1999), Meeting Date 1998, 625-628. Editor(s): Labandeira, J. J. Torres; Vila-Jato, J. L. Kluwer Academic Publishers: Dordrecht, Neth.
CODEN: 68NHAE
DOCUMENT TYPE: Conference
LANGUAGE: English
AB In the continuing challenge of increasing the performances of cyclodextrins (CD5) for various applications, it has been observed that very simple chemical modifications of the CD core lead to very large improvements. A clear illustration is provided by mono-3, 6-anhydro-βCD (1) , mono- 3,6- anhydro-heptakis-2-O-methyl-hexakis-6-O-methyl-β3CD (2), and mono-3,6-anhydro-heptakis-2,3-O-methyl- hexakis-6-O-methyl-βCD (3). These compds. are prepared and purified by HPLC. A structural anal. of (1) alone and with different chiral mols. has been already performed. A complete characterization of (2) and (3) has been achieved by high resolution NMR and mass spectrometry with electrospray infusion mode and have shown a complete reduction of symmetry. These three compds. exhibit inclusion properties similar to the parent CD as observed by NMR for a variety of hosts. However, the lack of symmetry induces a very large chiral separation of racemic compds. Moreover they display a strongly

increased solubility and solubilization power even at high temperature The hemolytic character of these three compds. has been also investigated and compared to homogeneous series of pure β-CD derivs. Finally, it was shown as expected that antibodies raised against β-CD, di-2,6-O-methyl-β-CD (DIMEB) and tri-2,3,6-O-methyl-β-CD (TRIMEB), resp., failed to recognize any asym. analog.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1991:680410 CAPLUS
DOCUMENT NUMBER: 115:280410
TITLE: Per-3,6-anhydro-α-cyclodextrin and per-3,6-anhydro-β- cyclodextrin
AUTHOR(S): Ashton, Peter R.; Ellwood, Paul; Staton, Ian; Stoddart, J. Fraser
CORPORATE SOURCE: Dep. Chem., Univ. Sheffield, Sheffield, S3 7HF, UK
SOURCE: Journal of Organic Chemistry (1991), 56(26), 7274-80
CODEN: JOCEAH; ISSN: 0022-3263
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

AB The synthesis of the per-3,6-anhydro derivs., e.g. I (n = 6, 7) of α- and β- cyclodextrins (CDs) is described starting from the corresponding per-6-O-tosylates. These could only be obtained as pure compds. following repeated HPLC under reversed phase conditions of the crude products isolated after tosylation of α-CD and β-CD in pyridine with p-toluenesulfonyl chloride. Treatment of the per-6-O-tosyl-α- and β-CDs with warm aqueous NaOH solns. (50-60 °C) afforded the per-3,6-anhydro-α- and β-CDs in good yields. The development of an alternative and successful strategy for the synthesis of per-3,6-anhydro-α-CD from the known per-2,3-di-O-benzoyl-6-tosyl-α-CD relies upon the use of Et3N as base in refluxing aqueous MeOH. The per-3,6-anhydro-CDs have been fully characterized by FABMS and NMR spectroscopy. Their specific optical rotations, which are solvent dependent, confirm the chiral nature of these mols. The anhydrides are soluble in such widely different solvents as CH2Cl2 and H2O. There is evidence from FABMS that per-3,6-anhydro-α-CD forms a complex with the triethylammonium cation while per-3,6-anhydro-β-CD solubilizes PhNO2 in D2O solns.

L30 ANSWER 4 OF 4 MEDLINE on STN
ACCESSION NUMBER: 2001383277 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11338780
TITLE: 1H-NMR study of heavy metals complexation with hexakis(3,6-anhydro) tetrakis(2A,B,D,E-O-octyl) cyclomaltohexaose (OCT).

AUTHOR: Debouzy J C; Gadelle A; Fauvelle F; Nardin R; Aous S; Lhoste F; Pailler Y
CORPORATE SOURCE: CRSSA, Biological and Molecular Biophysics Lab., -La Tronche, France.
SOURCE: Bollettino chimico farmaceutico, (2001 Jan-Feb) Vol. 140, No. 1, pp. 9-14.
Journal code: 0372534. ISSN: 0006-6648.
PUB. COUNTRY: Italy
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200107
ENTRY DATE: Entered STN: 9 Jul 2001
Last Updated on STN: 9 Jul 2001
Entered Medline: 5 Jul 2001
AB The selection of the cations bound by hexakis (3,6-anhydro) tetrakis (2A,B,D,E-O-octyl) cyclomatohexaose (OCT) was performed by thin layer chromatography. The three cations selected, UO(2)2+, Pb2+ and Hg2+ were then studied by 1H-NMR. A 2:1 OCT/cation stoichiometry was identified in the cases of UO(2)2+ and Pb2+. While UO(2)2+ binding (logK around 6) followed a fast exchange kinetics, a slow or intermediate complexation was found with Pb2+ (logK = 5.6) and Pb2+, respectively. In the latter case, the poor solubility of Hg2+ precluded to propose neither a stoichiometry nor an estimation of the affinity constant.

L43 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1995:382033 CAPLUS
DOCUMENT NUMBER: 122:265827
TITLE: Synthesis and alkali metal ion binding of poly(3,6-anhydro)-α-cyclodextrins
AUTHOR(S): Yamamura, Hatsuo; Nagaoka, Hideki; Kawai, Masao; Butsugan, Yasuo; Fujita, Kahee
CORPORATE SOURCE: Dep. Appl. Chem., Nagoya Inst. Technol., Nagoya, 466, Japan
SOURCE: Tetrahedron Letters (1995), 36(7), 1093-4
CODEN: TELEAY; ISSN: 0040-4039
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Pentakis(3,6-anhydro)-α-cyclodextrin and three regioisomers of tetrakis(3,6-anhydro)-α- cyclodextrin were synthesized from the corresponding 6-O-sulfonates to investigate the relationship among the mol. geometry, hydrophobicity -hydrophilicity balance, and inclusion behavior of CD. Each of the CD derivs. exhibited characteristic cation binding ability reflecting the unique mol. structure.

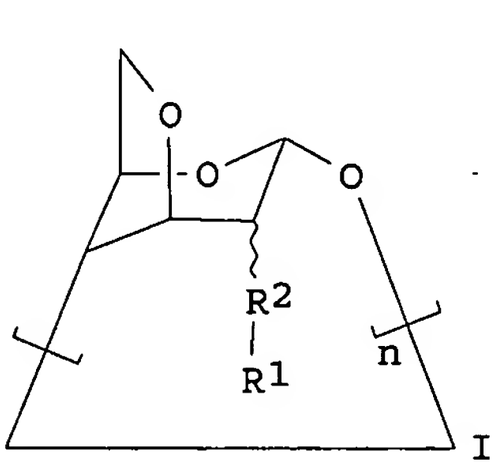
L43 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1994:192120 CAPLUS
DOCUMENT NUMBER: 120:192120
TITLE: Conformational study of 3A,6A-anhydro-cyclomaltohexaose in solution
AUTHOR(S): Durier, Viviane; Mazeau, Karim; Gey, Claude; Driguez, Hugues; Taravel, Francois R.
CORPORATE SOURCE: Cent. Rech. Macromol. Veg., CNRS, Grenoble, 38041, Fr.
SOURCE: New Journal of Chemistry (1993), 17(12), 843-9
CODEN: NJCHE5; ISSN: 1144-0546
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The conformational behavior of a modified cyclodextrin, 3A,6A-anhydrocyclomaltohexaose in solution, and of two model disaccharides (Me 4-O-(α-D-glucopyranosyl)- 3,6-anhydro -β-D-glucopyranoside, and Me 4-O-(3,6-anhydro-α-D-glucopyranosyl)-β-D-glucopyranoside) has been characterized through combined NMR and mol. modeling studies. In parallel, the conformational anal. of the disaccharides and of the modified cyclodextrin was achieved with the CHARMM program. Both disaccharides have limited stability (ϕ,ψ) domains because of steric repulsions, lack of flexibility of the 3,6-anhydro unit, and the existence of several inter-residue hydrogen bonds. The agreement between exptl. and calculated vicinal coupling consts. is good. Generated conformations for the modified cyclodextrin, have been classified into three groups: regular, intermediate and distorted. For the latter, a glucose unit adjacent to the 3,6-anhydro residue is tilted towards the inside of the hydrophobic cavity. The NMR data are in agreement with the data calculated for the intermediate form which could correspond to the preferred conformation in solution

L44 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:650987 CAPLUS
DOCUMENT NUMBER: 141:174407
TITLE: Per(3,6-anhydro) cyclodextrin derivatives, their preparation and their use for delivery of metal elements to biological targets or for decontamination of biological targets or fluids
INVENTOR(S): Baudin, Cecile; Perly, Bruno; Dalbiez, Jean Pierre
PATENT ASSIGNEE(S): Commissariat a l'Energie Atomique, Fr.
SOURCE: Fr. Demande, 47 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2850972	A1	20040813	FR 2003-1474	20030207
FR 2850972	B1	20050311		
WO 2004071639	A2	20040826	WO 2004-FR50048	20040206
WO 2004071639	A3	20041007		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1597284	A2	20051123	EP 2004-708796	20040206
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2006522840	T	20061005	JP 2006-502174	20040206

PRIORITY APPLN. INFO.: FR 2003-1474 A 20030207
WO 2004-FR50048 W 20040206

OTHER SOURCE(S): MARPAT 141:174407
GI



I

AB Per(3,6-anhydro)cyclodextrin I, wherein R1 represents a radical chosen among peptides, proteins, lipids, oligonucleotides, poly-nucleotides, oligosaccharides, polysaccharides, bio-polymers; R1 independently represent OH, OR3, OM, HS, SR3, OCOR3, NH2, NHR3, NR3R4, CONH2, CONHR3, CONR3R4, CN, COOR3, OCH2COOH, COOH, OSO2R3, N3; R3 and R4 are identical or different, represent hydrocarbon, aliphatic, aromatic possibly substituted by atoms of halogen which can comprise one or more heteroatoms among O, S and N; M represents a selected monovalent cation among the alkaline metal cations; R2 represent a simple connection or a

spacer group and n is 6-8. These derivs. are used in particular to convey metal elements towards biol. targets or to decontaminate biol. targets or fluids. Thus, [(mono-2-O-methyl-amido)-per(3,6-anhydro)-α- cyclodextrin]-L-Ala-L-Phe-OMe ester was prepared and formed complexes with Pb2+ and Er3+ cations.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:923095 CAPLUS
DOCUMENT NUMBER: 139:138695
TITLE: Amphiphilic per(3,6-anhydro, 2-O-ethyl)-α-cyclodextrin: the first step towards self-gelifying cation cryptants?
AUTHOR(S): Debouzy, J. C.; Gadelle, A.; Fauvelle, F.; Pailler, J. Y.; Brasme, B.; Dabouis, V.; Aous, S.; Fusai, T.
CORPORATE SOURCE: Unite de Biophysique et Service de Biospectrometrie, CRSSA, La Tronche, 38702, Fr.
SOURCE: S.T.P. Pharma Sciences (2002), 12(5), 267-273
CODEN: STSSE5; ISSN: 1157-1489
PUBLISHER: Editions de Sante
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The properties of per(3,6-anhydro, 2-O-ethyl)-α- cyclodextrin (3,6-CDE) in solution and in the presence of synthetic membranes were studied by thin layer chromatog., mass, 31P-, 2H- and 1H-NMR spectroscopies, and superficial pressure measurements. It was found that 3,6-CDE exhibits a good affinity for Co2+, Hg2+, Sr2+, Pb2+ and Na+. Besides, ROESY expts. showed that two different conformations of 3,6-CDE were simultaneously present during slow exchange. The tensioactive properties of the soapy solution of 3,6-CDE in water/ethanol were shown by superficial tension (ST) measurements. Moreover, 31P-NMR showed an increase of the superficial fluidity of phospholipid dispersions, above the transition temperature in the presence of 3,6-CDE. Furthermore, no detergent effect was observed in the presence of small unilamellar vesicles of lecithin, membrane destructions being only observed after several days, or when 3,6-CDE and phospholipids were co-sonicated. These results lead to the discussion of the biol. availability of 3,6-CDE as a wound decontaminant, further chemical modifications being also suggested.
REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:535329 CAPLUS
DOCUMENT NUMBER: 132:88121
TITLE: Interaction of per(3,6-anhydro)-α- cyclodextrin (α36CD) and lead-α36CD complex with biological systems
AUTHOR(S): Debouzy, J. C.; Fauvelle, F.; Gadelle, A.; Baudin, C.; Richard, M.; Perly, B.; Chouteau, F.; Joets, J.; Tazz, J. J.; Daveloose, D.
CORPORATE SOURCE: CRSSA, Laboratoire RMN, Tronche, 38702, Fr.
SOURCE: Bollettino Chimico Farmaceutico (1998), 137(5), 144-151
CODEN: BCFAAI; ISSN: 0006-6648
PUBLISHER: Societa Editoriale Farmaceutica
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The interactions of per(3,6 anhydro)-α- cyclodextrin (α36CD) and of lead-α36CD complex with biol. systems were tested by NMR, ESR and electronic microscopy using erythrocytes and model membranes. It was found that the hemolytic activity of α36CD alone was seven fold lower than that of natural α- cyclodextrin (evaluated by the concentration inducing 50% hemolysis, DH50=35 mM). Conversely, the formation of the complex resulted in an increase of hemolytic properties, with DH50 of 1 mM. The mechanism proposed was an increased membrane diffusion by endocytosis of the complex, leading to higher amts. of intracellular

lead.

REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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=> d his

     (FILE 'HOME' ENTERED AT 07:25:41 ON 03 MAR 2007)

     FILE 'REGISTRY' ENTERED AT 07:26:00 ON 03 MAR 2007
                E PER(3,6-ANHYDRO)CYCLODEXTRIN/CN
L1            1 S E2
                E HEXAKIS(3,6-ANHYDRO)CYCLODEXTRIN/CN
L2            1 S E4
                E (3,6-ANHYDRO)CYCLODEXTRIN/CN

     FILE 'CAPLUS, MEDLINE' ENTERED AT 07:37:42 ON 03 MAR 2007
L3            4 S L1
L4            1 S L3 AND DRUG?
L5            3 S L3 NOT L4
L6            0 S "HEXAKIS(3,6-ANHYDRO)-Γ-CYCLODEXTRIN"
L7            2 S "OCTAKIS(3,6-ANHYDRO)-Γ-CYCLODEXTRIN"
L8            2 S "HEXAKIS(3,6-ANHYDRO)-A-CYCLODEXTRIN"
L9            0 S "OCTAKIS(3,6-ANHYDRO)-A-CYCLODEXTRIN"
L10           0 S "OCTAKIS(3,6-ANHYDRO)-B-CYCLODEXTRIN"
L11           0 S "HEXAKIS(3,6-ANHYDRO)-B-CYCLODEXTRIN"
L12           0 S "HEPTAKIS(3,6-ANHYDRO)-A-CYCLODEXTRIN"
L13           2 S "HEPTAKIS(3,6-ANHYDRO)-B-CYCLODEXTRIN"
L14           0 S "HEPTAKIS(3,6-ANHYDRO)-Γ-CYCLODEXTRIN"
L15       40889 S ?CYCLODEXTRIN?
L16           1 S L15 AND "3,6-ANDHYDRO"
L17           1 S L15 AND ?ANDHYDRO?
L18          64 S L15 AND "3,6-ANHYDRO"
L19           3 S L18 AND PHARMACEUT?
L20          61 S L18 NOT L19
L21           0 S L20 AND TOPICAL?
L22           0 S L20 AND EYE?
L23           2 S L20 AND TISSUE?
L24          59 S L20 NOT L23
L25           0 S L24 AND PERMEAB?
L26           3 S L24 AND DRUG?
L27          56 S L24 NOT L26
L28           0 S L27 AND CARRIER?
L29           0 S L27 AND PERSERVA?
L30           4 S L27 AND SOLUB?
L31          52 S L27 NOT L30
L32           2 S L31 AND DISEASE?
L33           2 S L31 AND STABIL?
L34           7 S L31 AND AGENT?
L35          45 S L31 NOT L34
L36           1 S L35 AND CELLS
L37           0 S L35 AND ACTIVE?
L38           0 S L35 AND DISSOL?
L39           0 S L35 AND BUFFER?
L40           0 S L35 AND OCCULAR
L41           0 S L35 AND TABLET?
L42           1 S L35 AND GEL
L43           2 S L35 AND HYDROPHOB?
L44           1 S L35 AND DELIVER?
L45           1 S L35 AND FACILI?
L46           2 S L35 AND MEMBRANE?
L47          43 S L35 NOT L46
L48          41 S L47 NOT L43
L49        4126 S L15 AND DRUG DELIVE?
L50        1610 S ?CYCLODEXTRIN? (P) DRUG DELIVER?
L51         392 S L50 AND STABIL?
L52          62 S L51 AND CARRIER?
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L53	5	S	L52 AND PRESERV?
L54	1	S	L52 AND TISSUE?
L55	46	S	L52 AND COMPLEX?
L56	5	S	L55 AND MEMBRANE?

L5 ANSWER 8 OF 8 MEDLINE on STN
ACCESSION NUMBER: 2001443597 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11489551
TITLE: Cyclodextrins in topical drug formulations: theory and practice.
AUTHOR: Loftsson T; Masson M
CORPORATE SOURCE: Faculty of Pharmacy, University of Iceland, Hofsvallagata 53, PO Box 7210, IS-107, Reykjavik, Iceland.. thorstlo@hi.is
SOURCE: International journal of pharmaceutics, (2001 Aug 28) Vol. 225, No. 1-2, pp. 15-30. Ref: 139
Journal code: 7804127. ISSN: 0378-5173.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200109
ENTRY DATE: Entered STN: 13 Aug 2001
Last Updated on STN: 24 Sep 2001
Entered Medline: 20 Sep 2001

AB Cyclodextrins are cyclic oligosaccharides with a hydrophilic outer surface and a somewhat lipophilic central cavity . Cyclodextrins are able to form water-soluble inclusion complexes with many lipophilic water-insoluble drugs. In aqueous solutions drug molecules located in the central cavity are in a dynamic equilibrium with free drug molecules. Furthermore, lipophilic molecules in the aqueous complexation media will compete with each other for a space in the cavity. Due to their size and hydrophilicity only insignificant amounts of cyclodextrins and drug/cyclodextrin complexes are able to penetrate into lipophilic biological barriers, such as intact skin. In general, cyclodextrins enhance topical drug delivery by increasing the drug availability at the barrier surface. At the surface the drug molecules partition from the cyclodextrin cavity into the lipophilic barrier. Thus, drug delivery from aqueous cyclodextrin solutions is both diffusion controlled and membrane controlled. It appears that cyclodextrins can only enhance topical drug delivery in the presence of water.

L5 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:572452 CAPLUS
DOCUMENT NUMBER: 136:252326
TITLE: Cyclodextrins in topical drug formulations: theory and practice
AUTHOR(S): Loftsson, T.; Masson, M.
CORPORATE SOURCE: Faculty of Pharmacy, University of Iceland, Reykjavik, IS-107, Iceland
SOURCE: International Journal of Pharmaceutics (2001), 225(1-2), 15-30
CODEN: IJPHDE; ISSN: 0378-5173
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review with refs. Cyclodextrins are cyclic oligosaccharides with a hydrophilic outer surface and a somewhat lipophilic central cavity. Cyclodextrins are able to form water-soluble inclusion complexes with many lipophilic water-insol. drugs. In aqueous solns. drug mols. located in the central cavity are in a dynamic equilibrium with free drug mols. Furthermore, lipophilic mols. in the aqueous complexation media will compete with each other for a space in the cavity. Due to their size and hydrophilicity only insignificant amts. of cyclodextrins and drug/cyclodextrin complexes are able to penetrate into lipophilic biol. barriers, such as intact skin. In general, cyclodextrins enhance topical drug delivery by increasing the drug availability at the barrier surface. At the surface the drug mols. partition from the cyclodextrin cavity into the lipophilic barrier. Thus, drug delivery from aqueous cyclodextrin solns. is both diffusion controlled and membrane controlled. It appears that cyclodextrins can only enhance topical drug delivery in the presence of water.

REFERENCE COUNT: 140 THERE ARE 140 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:572452 CAPLUS
DOCUMENT NUMBER: 136:252326
TITLE: Cyclodextrins in topical drug formulations: theory and practice
AUTHOR(S): Loftsson, T.; Masson, M.
CORPORATE SOURCE: Faculty of Pharmacy, University of Iceland, Reykjavik, IS-107, Iceland
SOURCE: International Journal of Pharmaceutics (2001), 225(1-2), 15-30
CODEN: IJPHDE; ISSN: 0378-5173
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review with refs. Cyclodextrins are cyclic oligosaccharides with a hydrophilic outer surface and a somewhat lipophilic central cavity. Cyclodextrins are able to form water-soluble inclusion complexes with many lipophilic water-insol. drugs. In aqueous solns. drug mols. located in the central cavity are in a dynamic equilibrium with free drug mols. Furthermore, lipophilic mols. in the aqueous complexation media will compete with each other for a space in the cavity. Due to their size and hydrophilicity only insignificant amts. of cyclodextrins and drug/cyclodextrin complexes are able to penetrate into lipophilic biol. barriers, such as intact skin. In general, cyclodextrins enhance topical drug delivery by increasing the drug availability at the barrier surface. At the surface the drug mols. partition from the cyclodextrin cavity into the lipophilic barrier. Thus, drug delivery from aqueous cyclodextrin solns. is both diffusion controlled and membrane controlled. It appears that cyclodextrins can only enhance topical drug delivery in the presence of water.

REFERENCE COUNT: 140 THERE ARE 140 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

ENTRY DATE: Entered STN: 16 Apr 2002
Last Updated on STN: 28 Jun 2002
Entered Medline: 27 Jun 2002

AB Cyclodextrins are cylindrical oligosaccharides with a lipophilic central cavity and hydrophilic outer surface. They can form water-soluble complexes with lipophilic drugs, which 'hide' in the cavity. Cyclodextrins can be used to form aqueous eye drop solutions with lipophilic drugs, such as steroids and some carbonic anhydrase inhibitors. The cyclodextrins increase the water solubility of the drug, enhance drug absorption into the eye, improve aqueous stability and reduce local irritation. Cyclodextrins are useful excipients in eye drop formulations of various drugs, including steroids of any kind, carbonic anhydrase inhibitors, pilocarpine, cyclosporins, etc. Their use in ophthalmology has already begun and is likely to expand the selection of drugs available as eye drops. In this paper we review the properties of cyclodextrins and their application in eye drop formulations, of which their use in the formulation of dexamethasone eye drops is an example. Cyclodextrins have been used to formulate eye drops containing corticosteroids, such as dexamethasone, with levels of concentration and ocular absorption which, according to human and animal studies, are many times those seen with presently available formulations. Cyclodextrin-based dexamethasone eye drops are well tolerated in the eye and seem to provide a higher degree of bioavailability and clinical efficiency than the steroid eye drop formulations presently available. Such formulations offer the possibility of once per day application of corticosteroid eye drops after eye surgery, and more intensive topical steroid treatment in severe inflammation. While cyclodextrins have been known for more than a century, their use in ophthalmology is just starting. Cyclodextrins are useful excipients in eye drop formulations for a variety of lipophilic drugs. They will facilitate eye drop formulations for drugs that otherwise might not be available for topical use, while improving absorption and stability and decreasing local irritation.

L5 ANSWER 8 OF 8 MEDLINE on STN
ACCESSION NUMBER: 2001443597 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11489551
TITLE: Cyclodextrins in topical drug formulations: theory and practice.
AUTHOR: Loftsson T; Masson M
CORPORATE SOURCE: Faculty of Pharmacy, University of Iceland, Hofsvallagata 53, PO Box 7210, IS-107, Reykjavik, Iceland.. thorstlo@hi.is
SOURCE: International journal of pharmaceutics, (2001 Aug 28) Vol. 225, No. 1-2, pp. 15-30. Ref: 139
Journal code: 7804127. ISSN: 0378-5173.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200109
ENTRY DATE: Entered STN: 13 Aug 2001
Last Updated on STN: 24 Sep 2001
Entered Medline: 20 Sep 2001

AB Cyclodextrins are cyclic oligosaccharides with a hydrophilic outer surface and a somewhat lipophilic central cavity . Cyclodextrins are able to form water-soluble inclusion complexes with many lipophilic water-insoluble drugs. In aqueous solutions drug molecules located in the central cavity are in a dynamic equilibrium with free drug molecules. Furthermore, lipophilic molecules in the aqueous complexation media will compete with each other for a space in the cavity. Due to

their size and hydrophilicity only insignificant amounts of cyclodextrins and drug/cyclodextrin complexes are able to penetrate into lipophilic biological barriers, such as intact skin. In general, cyclodextrins enhance topical drug delivery by increasing the drug availability at the barrier surface. At the surface the drug molecules partition from the cyclodextrin cavity into the lipophilic barrier. Thus, drug delivery from aqueous cyclodextrin solutions is both diffusion controlled and membrane controlled. It appears that cyclodextrins can only enhance topical drug delivery in the presence of water.

L5 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:352448 CAPLUS
DOCUMENT NUMBER: 144:198171
TITLE: Cyclodextrins in drug delivery
AUTHOR(S): Loftsson, Thorsteinn; Jarho, Pekka; Masson, Mar; Jaervinen, Tomi
CORPORATE SOURCE: Faculty of Pharmacy, University of Iceland, Reykjavik, IS-107, Iceland
SOURCE: Expert Opinion on Drug Delivery (2005), 2(2), 335-351
CODEN: EODDAW; ISSN: 1742-5247
PUBLISHER: Ashley Publications Ltd.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review. Cyclodextrins are a family of cyclic oligosaccharides with a hydrophilic outer surface and a lipophilic central cavity. Cyclodextrin mols. are relatively large with a number of hydrogen donors and acceptors and, thus, in general they do not permeate lipophilic membranes. In the pharmaceutical industry cyclodextrins have mainly been used as complexing agents to increase aqueous solubility of poorly soluble drugs, and to increase their bioavailability and stability. Studies in both humans and animals have shown that cyclodextrins can be used to improve drug delivery from almost any type of drug formulation. However, the addition of cyclodextrins to existing formulations without further optimization will seldom result in acceptable outcome. Currently there are .apprx. 30 different pharmaceutical products worldwide containing drug/cyclodextrin complexes on the market.
REFERENCE COUNT: 154 THERE ARE 154 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:732314 CAPLUS
DOCUMENT NUMBER: 138:406640
TITLE: Cyclodextrins as drug carriers
AUTHOR(S): Jug, M.; Becirevic-Lacan, M.
CORPORATE SOURCE: Croatia
SOURCE: Farmaceutski Glasnik (2002), 58(6), 189-204
CODEN: FAGLAI; ISSN: 0014-8202
PUBLISHER: Hrvatsko Farmaceutsko Drustvo
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Croatian
AB A review, with refs. Cyclodextrins are cyclic oligosaccharides with hydrophilic outer surface and lipophilic central cavity able to form inclusion complexes with many lipophilic water-insol. drugs. In the solns., drug mols. located in the central cavity are in dynamic equilibrium with free drug mols. Due to the cyclodextrins size and hydrophilicity only insignificant amts. of cyclodextrins will be able to penetrate across the biol. barriers and only free drug will be absorbed. Cyclodextrins are very useful pharmaceutical excipients, able to improve drug solubility and stability and modify sensory characteristics such as unpleasant taste and smell of the drug. Recently cyclodextrins are used in design of advanced dosage forms. The hydrophilic and ionizable cyclodextrins can serve as potent drug carriers in the immediate release- and delayed release - formulations, while the release rate of water-soluble drugs can be retarded by hydrophobic cyclodextrins. The combination of mol. encapsulation with other carrier materials will become effective and valuable tool in the improvement of the drug formulation. Moreover, the most desirable attribute for the drug carrier is its ability to deliver drug to a targeted site: conjugates of a drug

with cyclodextrin can be used in colon drug delivery. On the basis of this knowledge, it can be expected that cyclodextrins will play an important role in design of advanced drug formulations.

L5 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:369635 CAPLUS
DOCUMENT NUMBER: 138:126800
TITLE: Cyclodextrins in eye drop formulations: Enhanced topical delivery of corticosteroids to the eye
AUTHOR(S): Loftsson, Thorsteinn; Stefansson, Einar
CORPORATE SOURCE: Faculties of Pharmacy, University of Iceland, Reykjavik, Iceland
SOURCE: Acta Ophthalmologica Scandinavica (2002), 80(2), 144-150
CODEN: AOSCFV; ISSN: 1395-3907
PUBLISHER: Blackwell Munksgaard
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review, with refs. Cyclodextrins are cylindrical oligosaccharides with a lipophilic central cavity and hydrophilic outer surface. They can form water-soluble complexes with lipophilic drugs, which "hide" in the cavity.
Cyclodextrins can be used to form aqueous eye drop solns. with lipophilic drugs, such as steroids and some carbonic anhydrase inhibitors. The cyclodextrins increase the water solubility of the drug, enhance drug absorption into the eye, improve aqueous stability and reduce local irritation. Cyclodextrins are useful excipients in eye drop formulations of various drugs, including steroids of any kind, carbonic anhydrase inhibitors, pilocarpine, cyclosporins, etc. Their use in ophthalmol. has already begun and is likely to expand the selection of drugs available as eye drops.
In this paper we review the properties of cyclodextrins and their application in eye drop formulations, of which their use in the formulation of dexamethasone eye drops is an example.
Cyclodextrins have been used to formulate eye drops containing corticosteroids, such as dexamethasone, with levels of concentration and ocular absorption which, according to human and animal studies, are many times those seen with presently available formulations. Cyclodextrin-based dexamethasone eye drops are well tolerated in the eye and seem to provide a higher degree of bioavailability and clin. efficiency than the steroid eye drop formulations presently available. Such formulations offer the possibility of once per day application of corticosteroid eye drops after eye surgery, and more intensive topical steroid treatment in severe inflammation. While cyclodextrins have been known for more than a century, their use in ophthalmol. is just starting. Cyclodextrins are useful excipients in eye drop formulations for a variety of lipophilic drugs. They will facilitate eye drop formulations for drugs that otherwise might not be available for topical use, while improving absorption and stability and decreasing local irritation.
REFERENCE COUNT: 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:572452 CAPLUS
DOCUMENT NUMBER: 136:252326
TITLE: Cyclodextrins in topical drug formulations: theory and practice
AUTHOR(S): Loftsson, T.; Masson, M.
CORPORATE SOURCE: Faculty of Pharmacy, University of Iceland, Reykjavik, IS-107, Iceland
SOURCE: International Journal of Pharmaceutics (2001), 225(1-2), 15-30

CODEN: IJPHDE; ISSN: 0378-5173
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review with refs. Cyclodextrins are cyclic oligosaccharides with a hydrophilic outer surface and a somewhat lipophilic central cavity. Cyclodextrins are able to form water-soluble inclusion complexes with many lipophilic water-insol. drugs. In aqueous solns. drug mols. located in the central cavity are in a dynamic equilibrium with free drug mols. Furthermore, lipophilic mols. in the aqueous complexation media will compete with each other for a space in the cavity. Due to their size and hydrophilicity only insignificant amts. of cyclodextrins and drug/cyclodextrin complexes are able to penetrate into lipophilic biol. barriers, such as intact skin. In general, cyclodextrins enhance topical drug delivery by increasing the drug availability at the barrier surface. At the surface the drug mols. partition from the cyclodextrin cavity into the lipophilic barrier. Thus, drug delivery from aqueous cyclodextrin solns. is both diffusion controlled and membrane controlled. It appears that cyclodextrins can only enhance topical drug delivery in the presence of water.
REFERENCE COUNT: 140 THERE ARE 140 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 5 OF 8 MEDLINE on STN
ACCESSION NUMBER: 2005616829 MEDLINE
DOCUMENT NUMBER: PubMed ID: 16296758
TITLE: Cyclodextrins in drug delivery.
AUTHOR: Loftsson Thorsteinn; Jarho Pekka; Masson Mar; Jarvinen Tomi
CORPORATE SOURCE: University of Iceland, Faculty of Pharmacy, Hagi, Reykjavik.. thorstlo@hi.is
SOURCE: Expert opinion on drug delivery, (2005 Mar) Vol. 2, No. 2, pp. 335-51. Ref: 156
Journal code: 101228421. ISSN: 1742-5247.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200609
ENTRY DATE: Entered STN: 22 Nov 2005
Last Updated on STN: 16 Sep 2006
Entered Medline: 15 Sep 2006
AB Cyclodextrins are a family of cyclic oligosaccharides with a hydrophilic outer surface and a lipophilic central cavity. Cyclodextrin molecules are relatively large with a number of hydrogen donors and acceptors and, thus, in general they do not permeate lipophilic membranes. In the pharmaceutical industry cyclodextrins have mainly been used as complexing agents to increase aqueous solubility of poorly soluble drugs, and to increase their bioavailability and stability. Studies in both humans and animals have shown that cyclodextrins can be used to improve drug delivery from almost any type of drug formulation. However, the addition of cyclodextrins to existing formulations without further optimisation will seldom result in acceptable outcome. Currently there are approximately 30 different pharmaceutical products worldwide containing drug/cyclodextrin complexes on the market.

L5 ANSWER 6 OF 8 MEDLINE on STN
ACCESSION NUMBER: 2005119389 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15748165
TITLE: Protection by cholesterol-extracting cyclodextrins: a role

for N-methyl-D-aspartate receptor redistribution.
AUTHOR: Abulrob Abedelnasser; Tauskela Joseph S; Mealing Geoff; Brunette Eric; Faid Karim; Stanimirovic Danica
CORPORATE SOURCE: Cerebrovascular Research Group, Institute for Biological Sciences, National Research Council of Canada, 1200 Montreal Road, Ottawa, Ontario, K!A 0R6, Canada.
SOURCE: Journal of neurochemistry, (2005 Mar) Vol. 92, No. 6, pp. 1477-86.
Journal code: 2985190R. ISSN: 0022-3042.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200504
ENTRY DATE: Entered STN: 8 Mar 2005
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AB Cyclodextrins (CDs) are cyclic oligosaccharides composed of a lipophilic central cavity and a hydrophilic outer surface. Some CDs are capable of extracting cholesterol from cell membranes and can affect function of receptors and proteins localized in cholesterol-rich membrane domains. In this report, we demonstrate the neuroprotective activity of some CD derivatives against oxygen-glucose deprivation (OGD), N-methyl-D-aspartic acid (NMDA) and glutamate in cortical neuronal cultures. Although all CDs complexed with NMDA or glutamate, only beta-, methylated beta- and sulfated beta-CDs displayed neuroprotective activity and lowered cellular cholesterol. Only CDs that lowered cholesterol levels redistributed the NMDA receptor NR2B subunit, PSD-95 (postsynaptic density protein 95 kDa) and neuronal nitric oxide synthase (nNOS) from Triton X-100 insoluble membrane domains to soluble fractions. Cholesterol repletion counteracted the ability of methylated beta-CD to protect against NMDA toxicity, and reversed NR2B, PSD-95 and nNOS localization to Triton X-100 insoluble membrane fraction. Surprisingly, neuroprotective CDs had minimal effect on NMDA receptor-mediated increases in intracellular Ca(2+) concentration ([Ca(2+)](i)), but did suppress OGD-induced increases in [Ca(2+)](i). beta-CD, but not Mbeta-CD, also caused a slight block of NMDA-induced currents, suggesting a minor contribution to neuroprotection by direct action on NMDA receptors. Taken together, data suggest that cholesterol extraction from detergent-resistant microdomains affects NMDA receptor subunit distribution and signal propagation, resulting in neuroprotection of cortical neuronal cultures against ischemic and excitotoxic insults. Since cholesterol-rich membrane domains exist in neuronal postsynaptic densities, these results imply that synaptic NMDA receptor subpopulations underlie excitotoxicity, which can be targeted by CDs without affecting overall neuronal Ca(2+) levels.

L5 ANSWER 7 OF 8 MEDLINE on STN
ACCESSION NUMBER: 2002216484 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11952479
TITLE: Cyclodextrins in eye drop formulations: enhanced topical delivery of corticosteroids to the eye.
AUTHOR: Loftsson Thorsteinn; Stefansson Einar
CORPORATE SOURCE: Faculties of Pharmacy and Medicine, University of Iceland, Reykjavik, Iceland.
SOURCE: Acta ophthalmologica Scandinavica, (2002 Apr) Vol. 80, No. 2, pp. 144-50. Ref: 51
Journal code: 9507578. ISSN: 1395-3907.
PUB. COUNTRY: Denmark
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200206